



# Occupational Health Problems of the Auto Rickshaws Service Providers in Agartala City: A Case Study of Nagerjala Motor Stand

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## ABSTRACT

Health is a very significant matter in the daily life of a vehicle driver. Long hours on road contribute to the occupational health hazards. The aim of this study is to identify the health problems among the auto rickshaw service providers in relation to their age and the number of hours put in driving the auto rickshaws. The study had been carried out in Nagerjala Motor Stand, Agartala City in Tripura among the auto rickshaw drivers through interview method and obtained data were analysed with the help of statistical tools. The result showed that musculo-skeletal problem was most common and of frequent occurrence among all age groups of the auto rickshaw service providers. Relevant preventative measures have been suggested for the better health condition of the drivers.

**Key Words:** Health, Occupation, Auto-rickshaw, Musculo-Skeletal Problem

## INTRODUCTION

Health has been a major cause of concern in driving occupation especially among auto rickshaw drivers. Auto rickshaws are one of the major modes of para-transit transport system in urban <sup>5</sup> as well as in the fringe areas in Agartala City. Auto rickshaws are relatively cheaper and easily available form of public transport in most of the cities in India <sup>3</sup>. By nature it is designed as a three wheeler with small sized cabin and slightly curved long handle. It is able to ply in both main roads and narrow streets. Drivers spend a considerable amount of time in an environment full of pollutant gases, noisy, continuous cacophony and whole body vibration. Further harmful life-style are practised like irregularity of meals, no proper rest rooms, awful quality of sanitary toilets, bad posture while driving and stressful occupational conditions during their working hours. Such working parameters may be associated with various gastro intestinal disturbances, musculo-skeletal, cardio-vascular, respiratory, hearing and other problems which can hardly compromise with driving safety issues <sup>8, 9, 10</sup>. There have been lots of studies on the health profile of

long distance truck <sup>7, 8</sup> tempo <sup>2</sup> and bus drivers <sup>4, 6, 11</sup> and factors influencing them; but there have been very few studies about the short distance auto rickshaw drivers <sup>9</sup> and that too rarely done in India. As for many other cities, the auto rickshaw is one of the major modes of public transport system in Agartala City. Specific environmental conditions increased the probability of disability or illness like hearing impairment, lowering efficiency of ocular system; break down of nervous system etc. This study was planned to integrate and identify the health problems of the auto rickshaw drivers of Nagerjala Motor Stand of Agartala City. The study will also highlight various other factors which influence physical and emotional well being of auto rickshaw drivers showing that the work environment and stress directly affect their health.

## STUDY AREA

Nagerjala is one of the registered auto rickshaw node as well as terminal in Agartala City. Previously Nagerjala was a marshy land till the year of 2005. It was wetland where

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ISSN: 2231-2196 (Print)

ISSN: 0975-5241 (Online)

Received: 19.10.2017

Revised: 01.11.2017

Accepted: 13.11.2017

water covered the ground for a long period of time. The marshy land of Nagerjala was usually treeless and dominated by grasses and other herbaceous plants. The area was also surrounded by dense settlement where buildings were very compact in nature. With passage of time the present area has been transformed into a huge terminal zone. Mainly the terminal provides the commuters the facility to travel towards the southern part of the state covering the Sepahijala, Gomati and South Tripura Districts. The terminal consists of deluxe buses as well as Mini buses, jeep, Cruiser and 4 wheeler big passenger carriage (Tata Magic), and autos (3 wheeler) which connect and provide services to the commuters to move mostly towards the southern regions of the state. The Central, Northern and Eastern parts of the city areas also are well connected and accessible by auto rickshaws. Nagerjala auto rickshaw connects all nearby nodes like Chandrapur, Old Motor Stand, Gurkha Basti, R.M.S. Chowmuhuni etc. The node consists of diverse group of public transport system which include small and heavy vehicles that provide the travellers to go short or long distance destinations at different directions.

## METHODOLOGY

In order to study the proposed research problems and fulfil the objectives the researchers initially prepared the location map of the study area based on the road and ward map of Agartala City procured from the office of the Agartala Municipal Corporation (AMC). A suitable questionnaire was carried out among the auto rickshaw service providers in the selected area of Nagerjala Motor stand in Agartala City. A number of 84 subjects were taken as a clustered sample size and was interviewed mainly on their health problems during their services period of driving auto rickshaws. The collected data were analysed by statistical tools where the average, deviation and the variance level was taken out to find the most prevalent health problems among the auto rickshaw service providers. The paper was presented in the shape of tabular form along with logical elucidation of the facts of the present research work.

## RESULTS

Sometimes eye pain felt by the drivers is actually caused by irritation or inflammation of the surface of the eye, particularly the cornea. The major reason may be from multiple sclerosis, viral infections or bacterial infections. The symptom results on pressure behind the eye along with vision changes and eye pain. Pain is generally felt like a stabbing, burning or stinging sensation. Pressure behind the eyes gives the feeling of fullness or a stretching inside the eyes. A feeling of pressure in the eye causes eye pain, watering of eyes,

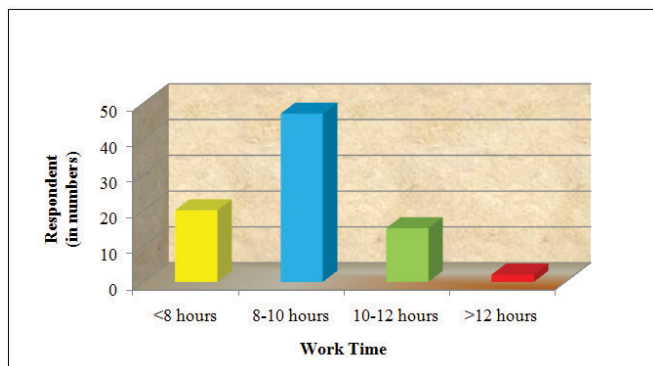
blurred vision, burning of eye, redness of eye and pain often leading to headache. Continuous driving of auto rickshaw in the busy road of Agartala puts tremendous stress on eye sight of the auto drivers leading to the problems of the ocular system. From the field survey it was found that 67.85 per cent of 40-50 age groups were suffering from severe ocular system problem. The deviation value was 2.47 whereas the variance level recorded as 6.09 per cent. This shows that out of the total respondents less than half were suffering from ocular problem.

Breathlessness is the distressing sensation of a deficit between the body's demand for breathing oxygen and the inability of the respiratory system to satisfy that demand. Poorly controlled asthma and years of practising of smoking causes low level of oxygen in the blood causing lack of red blood cells further increasing the problem of respiratory system. Although very few were found suffering from breathlessness with only 7.14 per cent in 40-50 age group of auto drivers. The deviation value was also found very less from the total with only 0.518 and the variance level 1.25 per cent where as in terms of dry cough none was found suffering from such problem.

Headache can be a sign of stress or physical distress caused by hyper tension, anxiety or depression. It can lead to other problems like high blood pressure. A headache can occur in any part of the head like on both sides of the head or just in one location. Headache can radiate across the head from a central point. They may last from less than an hour up to several days. From the field survey it was found that 67.85 per cent of 40-50 age groups frequently suffer from severe headache. On the other hand, 53.12 per cent of 29-39 age groups also suffer from similar problem. The deviation value is 3.52 whereas the variance level was recorded as 9.06 per cent. This shows that out of the total respondents more than half of the respondents suffer from nervous system problem. Thus 55.95 per cent of the total respondents have stated that for earning bread and butter by driving a small three wheeler for long hour daily pressure has been the centre of their stress and pressure causing headache and hyper tension which adversely affect their health.

Adopting hunched sitting position when driving can result in increased back and shoulder problems over time. The human back is composed of a complex structure of muscles, ligaments, tendons, disks and bones. The segments of our spine are cushioned with cartilage like pads called disks. Problem with any of these components can lead to back pain. Back pain can also be the result of some uncomfortable daily activity or poor posture. The pain may be characterised as a dull ache, shooting or piercing pain or burning sensation. It may radiate into the arms and hands as well as legs or feet and may include weakness and numbness in the legs or arms. It was found that most of the auto rickshaw drivers suffer

from musculo-skeletal problem that includes lower back pain (96.42 percent), knee pain (88.09 per cent), wrist pain (71.43 per cent), shoulder pain (100 per cent) and body ache (88.10 per cent). Such a problem is common with nine out of ten respondents of all age groups experiencing it at the same point in their life style. Maximum responders are engaged for 8-10 hours of driving. Continuously gripping the wheel and sitting at bad posture while driving, causes such musculo- skeletal problem creating shoulder and back pain at maximum level. Data from the field survey shows that both the deviation and variance level is much higher and closer to the total respondents of the study area.



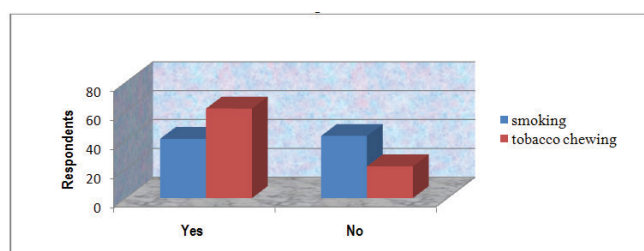
**Figure 1:** Daily Service Time of Auto Rickshaw Service Providers of Nagerjala Motor Stand.

Source: Field Survey, 2015-2016.

The circulatory system also called the cardiovascular system is the system that permits blood to circulate and transport nutrients, oxygen, carbon dioxide, hormones and blood cells to and from the cells in the body to provide nourishment and help in fighting disease and stabilize body temperature. From the field survey it was found that 48.81 per cent of the total respondents mainly of 29-39 and 40-50 age groups suffer from chest pain as they are habituated in smoking. The deviation value is 3.6 whereas the variance level was recorded as 9.27 per cent which shows that out of the total respondents more than half of the respondents suffer from Cardio-Vascular problem. The nicotine content in cigarettes makes one habituated rather addicted which makes one difficult to quit. Thus it increases the risk of several illnesses like tuberculosis, bronchitis, chronic obstructive pulmonary disease, lung cancer, high blood pressure, stroke, lowering of immunity and even coronary artery disease. It also covers the chest pain.

Another important health problem that has been identified among the auto rickshaw service providers are tooth decay. Tooth decay also known as dental caries or cavities, is a breakdown of teeth due to acids made by bacteria. The cavities may be a number of different colours from yellow to black. Symptoms may include pain and difficulty in eating. Complications may include inflammation of the tissues around the tooth, tooth loss and infection or abscess forma-

tion. From the field survey it was found that 73.81 per cent of the total respondents mainly of 29 to above age group suffer from caries as they are habituated in tobacco chewing. The deviation value is 3.78 whereas the variance level was recorded as 9.31 per cent which shows that most of the respondents suffer from dental problems. Poverty is also a significant social determinant for oral disease. Dental caries have been linked with lower socio-economic status. Caries is associated with poverty, poor cleaning of the mouth and receding gums resulting in exposure of the roots of the teeth. The use of tobacco also increases the risk for caries formation. Some brands of smokeless tobacco contain high sugar content, increasing susceptibility to caries. Tobacco use is a significant factor for periodontal disease.



**Figure 2:** Toxic Consumption by the Auto Rickshaw Service Providers of Nagerjala Motor Stand, Agartala City.

Source: Field Survey, 2015-2016

The digestive system is a group of organs working together to convert food into energy and basic nutrients to feed the entire body. Food passes through a long tube inside the body known as the alimentary canal or the gastro-intestinal system. After reaching the age of 40+ the common problem observed among many individuals is “Gas” or “Gastric Stomach Problem” leading to acid secretion. It causes severe pain and discomfort. It is known to all that gas is formed in everybody’s body which, however is eliminated by passing. This can be uncomfortable and embarrassing when the quality of gas increases in the oesophagus, stomach, small intestine and large intestine. The gases formed in human body primarily are carbon dioxide, oxygen, nitrogen, hydrogen and sometimes methane which are mostly odourless vapours. From the field survey it was found that 55.95 per cent of the total respondents mainly of 29 to 39 age group constituting 68.75 per cent of the total respondents suffer from gastric as they are habituated in taking fast food from the hotels or not having food in time. The deviation value is 4.31 whereas the variance level was recorded as 11.71 per cent which shows that maximum of the respondents suffer from gastro-intestinal problems.

Other than all the above mentioned health issues the other common health problem identified among auto rickshaw is the Low Blood Pressure (LBP). It is a result of abnormally low blood pressure in the arteries. Generally, the normal blood pressure in human body is 80 in the lower level and

**Table 1: Identification of different health problems through the perception study of the auto rickshaw service providers of Nagerjala Motor Stand, Agartala City**

Age Group		18-28	29-39	40-50	51-61	62-72	N	$\chi$	$\delta$	Co V
Health Problems										
Total Respondent	Number	15	32	28	8	1	84	38.191	5.31	13.9
	Percentage	100	100	100	100	100	100			
Pain In Eye	Number	4	11	19	2	1	37	40.541	2.47	6.09
	Percentage	26.66	34.37	67.85	25	100	44.04			
Breathlessness	Number	0	1	2	0	0	3	41.334	0.518	1.25
	Percentage	0	3.12	7.14	0	0	3.57			
Dry Cough	Number	0	0	0	0	0	0	0	0	0
	Percentage	0	0	0	0	0	0			
Headache	Number	7	17	19	3	1	47	38.915	3.528	9.06
	Percentage	46.66	53.12	67.85	37.5	100	55.95			
Back Pain	Number	12	32	28	8	1	81	38.754	4.95	12.77
	Percentage	80	100	100	100	100	96.42			
Knee Pain	Number	10	30	28	5	1	74	38.61	4.62	11.97
	Percentage	66.66	93.75	100	62.5	100	88.09			
Wrist Pain	Number	11	25	20	3	1	60	37.3	4.69	12.57
	Percentage	73.33	78.13	71.43	37.5	100	71.43			
Shoulder Pain	Number	15	32	28	8	1	84	38.2	5.31	13.9
	Percentage	100	100	100	100	100	100			
Chest Pain	Number	6	17	13	4	1	41	38.83	3.6	9.27
	Percentage	40	53.13	46.42	50	100	48.81			
Caries	Number	6	23	24	8	1	62	40.57	3.78	9.31
	Percentage	40	71.88	85.71	100	100	73.81			
Gastric	Number	8	22	14	3	0	47	36.81	4.31	11.71
	Percentage	53.33	68.75	50	37.5	100	55.95			
Skin Itching & Small Boils	Number	0	0	0	0	0	0	0	0	0
	Percentage	0	0	0	0	0	0	0	0	0
Body Ache	Number	12	28	26	7	1	74	38.61	4.76	12.33
	Percentage	80	87.5	92.86	87.5	100	88.10			
Frequent Fever	Number	0	0	0	0	0	0	0	0	0
	Percentage	0	0	0	0	0	0			
Low Pressure	Number	7	15	17	2	0	41	37.76	3.46	9.16
	Percentage	46.67	46.88	60.71	25	0	48.81			
Urinal Problem	Number	0	0	0	0	0	0	0	0	0
	Percentage	0	0	0	0	0	0			

Data Source: Field Survey, 2015-2016

120 at the upper level. But if this blood pressure drops unusually low, it can restrict the amount of blood flowing to our brain and vital organs which can cause unsteadiness, headache, sleepy, dizziness, fainting and even may fall to unconsciousness. From the field survey, it was found that 48.81 per cent of the respondents of mainly 40-50 age group are facing

such health problems. The deviation shows 3.46 whereas the variance level was found 9.16 per cent of the total variance of 13.9 per cent. As driving is the main occupation of the auto rickshaw drivers such health hazards may pose risky at any stage of the movement.

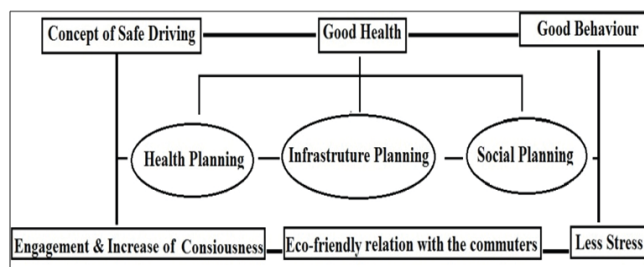


## DISCUSSION

The result showed that musculo-skeletal problem that comprises of Knee, Back, Wrist and Shoulder pain were the most common and frequently occurring among all age groups of the auto rickshaw service providers of the present study area. However, as the prevalence of various health complaints is very high among auto rickshaws service providers, there is an urgent need to overcome the situation. So to override the hurdles and to create a healthy and safe environment for the auto rickshaw drivers, the authors propose some preventive implementable measures as a future initiative for a good health of these service providers. These are divided into three categories.

1. **Health Planning:** A health Plan is an entity that offers or arranges for coverage of designated health services needed by members for a fixed, prepaid premium. Professional auto rickshaw drivers need physical exercise to keep them strong and fit to continue functioning in good condition. A healthy body is obtained by maintaining a good diet and good exercise to keep the body going. A sound mind is capable of good, positive and free thinking in a healthy body. Although finding time from their irregular route duties to schedule in exercise is very difficult. But taking out time for own from this busy schedule is much more important than ruining self and having an unhealthy life. However, benefits associated with doing physical exercise includes helping to build and maintain healthy muscles, joints and bones, increasing strength, stamina and endurance, helping to maintain weight and energy level, promoting better sleep and positive mental health, reducing the risk of depression and stress, improving mood and overall sense of well-being, improving resistance to infection, reducing the risk of heart disease, heart attack, stroke, cancer and keeping balance of blood pressure. More over regular health check-ups are also necessary for taking preventive measures.
2. **Infrastructural Planning:** Infrastructure refers to the fundamental facilities and systems serving an area for its economy to function well. The physical work environment often influences the mindset of the service providers and their efficiency and ability to innovate in delivering expanded services. A good work environment can facilitate better surroundings for the service providers. An unhealthy work environment always deteriorates the physical as well as mental ability of the service providers and puts an unhygienic condition that affects the others as well. Thus infrastructural planning for the auto rickshaw service providers is also an important element for the good health of this section of society. These planning will reorganising the existing space with well facilitated health centre, sanitation and rest room facilities and also providing them with healthy and clean quality of food and water. Such an innovative and refurbished infrastructure will

help to keep the health of the auto rickshaw drivers in good forum.



**Figure 3:** Health Cycle of a Driver.

Source: Prepared by the Authors

3. **Social Planning:** It focuses on improving well-being and quality of life in a community. It supports the community according to its needs to develop itself economically, socially and culturally. They perform an important task for the society by commuting the dwellers to their preferred destination. The auto rickshaw service providers have its own organization or group within the society. Few members are represented as their leaders who put forward the problems of these services providers. They elect their members by casting votes that are held within their organization. Thus this particular group of the society also needs representative attention including other socio-developmental activities. This puts the premise of social planning among the auto rickshaw drivers. It includes organizing regular meeting for knowing the crisis. Such activity will put the drivers to express them communally and to solve them to their best extent. Although further studies are also required to assess the possible risk factors for various health complaints among the auto rickshaw service providers.

## CONCLUSION

Auto rickshaw of Agartala Municipal Corporation area had faced a lot of challenges and problems since time being. But today, leaving behind all such constrains, this service of transportation are playing much more beneficial role in the society in different aspects and features in comparison to any other vehicular movements of transportation. Although, at present the Auto rickshaw service system of AMC area are facing variety of hazardous social problems within which the economy of both phenomena (Auto rickshaw drivers and service taker as Passengers) are being affected in an injurious manner. It is because of the absence of social awareness among the common people of the concern study area but maximum numbers of participation could erase such problems. Thus social awareness must be the main purpose of planning so that the proposals of developmental approach could flow in a better way.

## ACKNOWLEDGEMENT

Authors acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors/editors/publishers of all those articles, journals and book from where the literature for this article has been reviewed and discussed.

## Source of Funding

The research is funded by RET fellowship provided by the Tripura University.

## Abbreviation

1. AMC: Agartala Municipal Corporation
2. LBP: Low Blood Pressure
3. RET: Research Eligibility Test

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